

APPLICATION FOR LETTERS PATENT
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

FOR:
CONVERSION VEHICLE

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CONVERSION VEHICLE

FIELD OF THE INVENTION

[0001] The present invention relates to vehicle body configurations, and more particularly to a vehicle body capable of converting between two-passenger and four-passenger configurations.

BACKGROUND OF THE INVENTION

[0002] Currently, consumers seeking a vehicle with cargo carrying capabilities, such as a truck, are limited to either selecting a two-passenger cabin or a four-passenger cabin. A consumer desiring a four passenger cabin typically must endure a reduction in cargo carrying capabilities. Specifically, the extra row of seats for a four passenger cabin requires a large part of the truck's cargo area, reducing the type of objects that can be transported, such as longer pieces of lumber.

[0003] On the other hand, those consumers who prefer a two passenger cabin must forgo any hope of having extra seating area. Otherwise, they must decide if they are going to potentially sacrifice cargo area for a four passenger cabin. Accordingly, a need exists for a vehicle capable of converting between either a four-passenger or a two-passenger cabin configuration.

SUMMARY OF THE INVENTION

[0004] The present invention provides an apparatus for enabling the enlargement of the cabin for a vehicle having an enclosed cabin and a cargo bed extending rearwardly from the cabin. The apparatus includes a rear wall removably coupled to the cabin. A guide element is positioned along a floor of the cargo bed and a base portion of the rear wall is slideably coupled to the guide element, which enables the rear wall to be translated rearwardly from the cabin to vary a volume thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The present invention will become more fully understood from the detailed description and the accompanying drawings, wherein:

[0006] Figure 1 is a side view of a conversion vehicle in a two passenger configuration according to the principles of the present invention;

[0007] Figure 1a is an enlarged view of the vehicle of Figure 1 as indicated by circle 1a.

[0008] Figure 1b is an enlarged view of the vehicle of Figure 1 as indicated by circle 1b.

[0009] Figure 1c is an enlarged view of the vehicle of Figure 1 as indicated by circle 1c.

[0010] Figure 1d is an enlarged view of the vehicle of Figure 1 as indicated by circle 1d.

[0011] Figure 2 is a partial cross-sectional view of the vehicle of Figure 1;

[0012] Figure 3 is a cross sectional view of the rail in Figure 2;

[0013] Figure 4 is an exploded side view of the conversion vehicle of Figure 1;

[0014] Figure 5 is a side view of the vehicle in a four passenger configuration having an open cabin according to the principles of the present invention;

[0015] Figure 6 is a side view of the vehicle of Figure 5 having an enclosed cabin;

[0016] Figure 6a is a top view of the vehicle of Figure 6;

[0017] Figure 6b is a cross sectional view of the vehicle of Figure 6a along line 6b-6b;

[0018] Figure 7 is a side view of the vehicle having an extended open air cabin according to the principles of the present invention; and

[0019] Figure 8 is a side view of the vehicle of Figure 7 having an enclosed cabin.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] The following description of the preferred embodiments is merely exemplary in nature and is in no way intended to limit the invention, its application, or uses.

[0021] The present invention is generally related to a vehicle capable of converting from a two passenger to four passenger configuration. The present invention will be described as applicable to a lightweight pickup. However, it is to be understood that the principles embodied herein are equally applicable to other types of vehicles, such as, for example, full-size trucks and truck-hybrids.

[0022] Referring to Figure 1, a vehicle 10 is shown. The vehicle 10 has an engine compartment 12 coupled to a passenger cabin 14. The passenger cabin 14 is further coupled to a cargo area 16. The passenger cabin 14 includes a lift off roof panel 18. As shown in Figure 4, roof panel 18 has a first edge 17 and a second edge 19. The roof panel 18 is coupled at the first edge 17 to an A-pillar 20 and coupled at the second edge 19 to a B-pillar 22 as best shown in Figure 4. The B-pillar 22 has a first edge 23 and a second edge 25. The first edge 23 is coupled to the second edge 19 of the roof panel 18 and the second edge 25 couples the B-pillar 22 to the cargo area 16 as best shown in Figure 1.

[0023] The cargo area 16 includes a targa bar 24, which can generally be described as a U-shaped support beam generally following the contour of a rear end of passenger cabin 14, forming a rear wall, as known in the art. The targa bar 24 is attached to a first tonneau cover 26. The first tonneau cover 26 is in turn attached to a second tonneau cover 28. The targa bar 24 has a first end 30, as shown in Figure 1a, and a second end 32, as shown in Figure 1b. The first end 30 is removably coupled to the B-pillar 22 via a plurality of latches 34 as shown in Figure 2. In addition, as shown in Figure 1a, the first end 30 has a plurality of detents 36 which are configured to mate with a plurality of protrusions

38 on the second edge 25 of the B-pillar 22. Referring to Figure 1b, a second end 32 of the targa bar 24 is removably coupled to the first tonneau cover 26. The first tonneau cover 26 includes a first edge 40, as shown in Figure 1b, and a second edge 42 as best shown in Figure 1c. The first edge 40 has a plurality of detents 44 which engage a plurality of protrusions 46 located along a second edge 42 of the targa bar 24, as shown in Figure 1b. The second edge 42 has a plurality of protrusions 50, as shown in Figure 1c, which mate with the second tonneau cover 28. Specifically, the second tonneau cover 28 has a first edge 52, as shown in Figure 1c, and a second edge 54, as shown in Figure 1d. The first edge 52 of the second tonneau cover 28 includes a plurality of detents 56 for engagement with the plurality of protrusions 50 located on the second edge 42 of the first tonneau cover 26 as shown in Figure 1c. The second edge 54 of the second tonneau cover 28 also has a plurality of protrusions 58 which engage a plurality of detents 60 located along a rear edge 62 of the cargo area 16 as illustrated in Figure 1d.

[0024] With reference to Figures 2 and 3, the targa bar 24 is shown in greater detail. In Figure 2, the targa bar 24 is shown coupled to the B-pillar 22 and a load floor 64 in the cargo area 16. Two rails 66 are fixedly attached via fasteners 68 to the load floor 64 to facilitate the movement of the targa bar 24 as shown in Figure 3. The targa bar 24 has two legs 69, each including a base 70 slidably coupled to the rails 66. As shown in both Figures 2 and 3, each base 70 has four casters 72 retained within the base 70 by pins 74 for enabling the targa

bar 24 to move along the rails 66. Thus, once the targa bar 24 is uncoupled from the B-pillar 22, the targa bar 24 is free to move along the load floor 64.

[0025] Referring back to Figure 2, the targa bar 24 has an optional seat 76. The seat 76 is a typical bench seat as known in the art. As the targa bar 24 moves toward the rear edge 62 of the cargo area 16, the seat 76 may be unfolded to provide additional seating surfaces.

[0026] With reference now to Figure 4, a partially exploded view of the vehicle 10 is shown. In particular, the roof panel 18, first tonneau cover 26 and second tonneau cover 28 are detached from the vehicle 10. With the first and second tonneau covers 26, 28 removed, the targa bar 24 can be slidably displaced rearwardly from the B-pillar 22 to engage second tonneau cover 28, thereby defining area 16' as shown in Figure 5.

[0027] As shown in Figures 6 and 6a with the targa bar deployed to the position shown in Figure 5, the first tonneau cover 26 has been reattached to the new cargo area 16' to form an enclosed cargo or expanded section 78. Whether section 78 is considered passenger or cargo space is determined by whether or not seat 76 (Figure 2) is unfolded or kept stowed. Specifically, the first tonneau cover 26 has been attached to the targa bar 24 and B-pillar 22 via the mating of the detents 44 and protrusions 50 on the first tonneau cover 26 with the detents 36 of the targa bar 24 and the protrusions 38 of the B-pillar 22. Once the first tonneau cover 26 has been coupled between the targa bar 24 and B-pillar 22, optional windows 80 can be snapped between targa bar 24 and B-pillar 22. The optional windows 80 require placement of mating points 82 distributed along the

first edge 23 of the targa bar 24 and the second edge 25 of the B-pillar 22 as shown in Figure 6b.

[0028] A second displaced position for the targa bar 24 is shown in Figure 7. In this position the targa bar 24 is displaced to the rear edge 62 of the cargo area 16 such that detents 60 on the rear edge 62 mate with the protrusions 46 on the second edge 32 of the targa bar 24. The second displaced position for the targa bar 24 creates an enlarged area 16". In Figure 8, the enlarged area 16" is enclosed via the first tonneau cover 26 and second tonneau cover 28. In particular, the detents 44 on the first tonneau cover 26 mate with the protrusions 38 on the B-pillar 22 and the protrusions 50 on the first tonneau cover 26 engage the detents 56 on the second tonneau cover 28. The protrusions 50 on the second tonneau cover 28 further mate with the detents 36 on the first end 30 of the targa bar 24. The optional windows 80 can be snapped between the targa bar 24 and the B-pillar 22 as shown in Figure 6a .

[0029] The two-different displaced positions for the targa bar 24 provide increased passenger capabilities, or an enlarged enclosed cargo area of the vehicle 10. Additionally, all the parts needed to convert the vehicle store on the vehicle enabling quick changeovers at any location.

[0030] The description of the invention is merely exemplary in nature and, thus, variations that do not depart from the gist of the invention are intended to be within the scope of the invention. Such variations are not to be regarded as a departure from the spirit and scope of the invention.